VIRGINIA DEPARTMENT OF HEALTH

DIVISION OF TUBERCULOSIS CONTROL

Policy TB99-001: SCREENING FOR TUBERCULOSIS INFECTION & DISEASE

Screening for TB infection and providing treatment to prevent progression to active disease are important in the ultimate elimination of tuberculosis. However, these strategies are lower priority than core control activities such as the identification and treatment of active cases, contact investigations, and disease surveillance. As our resources become more limited, it will become increasingly important to direct any screening performed toward those populations where the yield and benefit is likely to be greatest.

Effective January 1, 1999, it will be policy of this Division to endorse only those screening programs that target specific high-risk populations and that include not only the initial evaluation for infection, but also a specific plan for assuring completion of preventive therapy. This policy, intended as a recommendation to the local health districts, has been developed in accordance with guidelines outlined by the Advisory Council for the Elimination of Tuberculosis (MMWR 1995; 44 (No. RR-11)). While some districts in the Commonwealth are capable of carrying out screening on a broader scale, it is suggested that this policy as well as national guidelines be consulted in planning for new programs or reviewing old ones.

TYPES OF SCREENING

Screening for disease

Screening for disease is appropriate in populations where the prevalence of active disease is high (e.g. homeless persons, migrant and seasonal workers, the foreign born). Screening for disease should begin with a clinical assessment for symptoms suggestive of tuberculosis. Those with TB-like symptoms should then undergo further evaluation, including sputum examination and/or chest radiography to either confirm or exclude the presence of disease. In some circumstances, screening with chest radiographs alone may be appropriate. However, this practice should be restricted to those settings where the risk of disease and of disease transmission are high and where a symptom evaluation is likely to be ineffective. It is suggested that this office be consulted before any radiographic screening program is initiated. Additionally, all persons with TB-like symptoms and sputum or radiographic examination suggestive of tuberculosis should be started on a standard, four-drug, anti-tuberculous regimen currently recommended by the ATS/CDC, pending final confirmation of the diagnosis.

Screening for infection

The tuberculin skin test is the only tool currently available for detecting tuberculous infection. Because this test has poor predictive value in unselected (low-risk) populations, patients must be carefully assessed for risk factors PRIOR to administration of the test. This assessment may be carried out individually or for a population group (homeless persons, foreign born from high prevalence countries). The evaluation must also include some assessment as to the likelihood that preventive therapy will be completed if prescribed. Populations or individuals that will not or cannot complete a course of preventive therapy should not, in general, be screened for infection. Patients who are candidates for screening should undergo a clinical assessment, including symptom review. Tuberculous disease must be excluded in patients in high-risk groups with TB-like symptoms, regardless of the results of the skin test. All skin testing performed for the evaluation of tuberculous infection must utilize 5TU (0.1cc) PPD applied intradermally by the Mantoux method. Multiple puncture techniques (e.g. Tine testing) have

insufficient sensitivity to be of value and their use, even in newborns and infants, should be abandoned. Current CDC/ATS guidelines for interpretation of the tuberculin skin test must be utilized. Once new tuberculous infection is identified, disease must be excluded with a chest radiograph.

Depending on clinical and demographic characteristics, preventive therapy may then be offered. A recent chest radiograph (within 3 months) showing no evidence suggestive of tuberculosis disease is required before preventive therapy is initiated. Patients on preventive therapy must be followed monthly to assess for TB-like symptoms as well as symptoms of drug intolerance. Additionally, some groups require laboratory monitoring. All screening programs must include defined measures for ensuring and monitoring compliance and completion of the prescribed course of treatment. These measures might include the use of directly observed preventive therapy (DOPT) or the development of alliances with community-based organizations as means of improving compliance, but should also incorporate a plan for ongoing evaluation of the effectiveness of the program based on state and national standards for completion of therapy. No specific follow up plan is required after completion of preventive therapy, although patients should be instructed to return for evaluation if TB-like symptoms develop. The practice of obtaining routine follow-up chest x-rays, including annual screening radiographs should be abandoned.

CANDIDATES FOR SCREENING

The following groups are at high risk of TB infection or progression to TB disease, once infected. Screening of groups other than those listed here is of low yield and diverts resources from high-priority activities. Such screening is not recommended and will not be endorsed or supported by the Division of TB Control:

- close contacts of persons with known or suspected tuberculosis
- persons infected with or at risk of being infected with HIV
- persons who inject illicit drugs or other locally identified high-risk substance users
- persons who have medical risk factors known to increase the risk for TB disease once infected
- residents and employees of high-risk congregate settings (e.g. correctional institutions, nursing homes, mental institutions, other long-term residential facilities
- health care workers who serve high-risk groups
- foreign-born persons, including children, recently arrived (within 5 years) from countries that have a high TB incidence or prevalence (Asia, Africa, Latin America)
- some medically underserved, low-income populations

- locally-identified racial, ethnic minority populations
- infants, children, and adolescents exposed to adults in high-risk categories

SCREENING AMONG SPECIFIC GROUPS

Persons with HIV infection

Co-infection with HIV is the most powerful risk factor for progression to TB disease in persons with TB infection. Screening for TB infection and disease among those known to be infected with HIV should be considered a high priority. This screening should occur as soon after HIV infection is detected and should consist of a tuberculin skin test and detailed symptom review. All individuals with positive tuberculin skin tests or with TB-like symptoms must undergo a chest radiograph and/or sputum collection to exclude active TB disease. Those with a positive TST, but without symptoms or radiographic abnormalities should receive preventive therapy. There is no indication for preventive therapy in the absence of a positive skin test unless the individual is a close contact of a known case of TB disease.

Mobile risk groups (homeless persons, seasonal workers)

Screening among high-risk populations that are mobile or otherwise unlikely to complete a course of preventive therapy (homeless persons, migrant or seasonal workers) should focus on finding disease among all, infection and disease among contacts of active cases, and among the immunosuppressed. Screening for TB infection among asymptomatic, non-immunosuppressed members of these populations should be abandoned unless procedures are in place for assuring completion of therapy. If such procedures can be assured, screening for infection among young children (up to the age of 4 years) should take priority over screening in the population as a whole.

Students (preschool, daycare, primary/secondary schools, colleges and universities)

Studies have consistently shown the routine screening of all children for TB infection prior to school entry or advancement to be of low yield. This practice should be abandoned. Screening of selected groups of children may be justified if they fall into one of the risk categories outlined above. In addition, we do not advocate pre-matriculation screening of all college and university students for tuberculous infection. In this population, unless measures are in place to ensure and monitor compliance with preventive therapy, screening should focus on the identification of persons with TB disease. If screening for infection is to be done, we suggest risk assessment and symptom evaluation be done in order to identify subgroups of students in whom tuberculin skin testing or other evaluation is indicated.

Prenatal clinics

Pregnancy does not confer an added risk of tuberculosis infection. There is therefore no rationale for screening for TB infection in this population unless the individual belongs to one of the risk groups outlined above. Although tuberculin skin testing is safe during pregnancy, preventive therapy is generally deferred until after the immediate post-partum period. We therefore recommend that in cases were screening for infection is indicated, it be deferred until after delivery so that the interval between diagnosis of infection and initiation preventive therapy can be minimized. This practice would eliminate the need for multiple radiographic examinations. Screening for disease with a symptom assessment is

appropriate and those with TB-like symptoms should undergo further evaluation, including a tuberculin skin test, chest radiograph, and sputum collection as indicated. Pregnant women with HIV infection or who are known to be close contacts of persons with TB disease should undergo TB skin testing and, if indicated, receive preventive therapy without delay.

Occupational risk groups (health care workers, residents of congregate facilities)

Certain health care facilities, nursing homes and other congregate living settings are mandated by regulation to screen residents and employees for tuberculosis at entry. In situations where there is likely to be ongoing repeated exposure, an annual evaluation for TB infection or disease may be indicated as recommended by the CDC (MMWR 1994; 43(No. RR-13)). The Division will continue to support such screening when carried out in accordance with published national guidelines.

Patients with a history of TB infection or disease (treated and cured)

There is no indication for routine follow-up chest radiographs in asymptomatic persons with a history of tuberculous infection or a prior history of tuberculosis disease that has been treated and cured. The practice of performing annual screening chest radiographs in those with a history of disease or prior infection should be abandoned. Persons in these categories who must undergo screening for employment or school entry should undergo a symptom assessment. Those with TB-like symptoms should be evaluated further with a chest radiograph and/or sputum collection. In order to satisfy screening regulations, it is suggested that the HCW performing the symptom assessment provide the employee/employer with a statement such as:

> *" The above named individual has a history of tuberculous infection (or tuberculous disease which has been treated and cured) and is currently free of symptoms suggestive of active tuberculosis. There is no indication for a chest x-ray at this time. This individual is believed to be free of tuberculosis in a communicable form."*

Patients with a history of treated and cured MDR-TB represent important exceptions to this rule and may require a more thorough annual evaluation, including a chest radiograph, to document the absence of recurrence.